



Town of Rowe



Municipal Vulnerability Preparedness (MVP) Program

MVP Resiliency Plan

DRAFT: May 2021

Facilitated by the
Franklin Regional Council of Governments
A State-Certified MVP Provider



MVP Resiliency Plan

Including the Summary of Findings from the
Community Resilience Building Workshop
March 2021

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Town of Rowe

Community Resilience Building Workshop

Summary of Findings

Overview:

Throughout Franklin County, Massachusetts, communities are experiencing more extreme weather events – especially heavy rains and flooding – along with higher temperatures and other climate-related conditions. These types of conditions are predicted to increase as a result of climate change. According to down-scaled climate data from resilientMA.org,¹ the major climate change drivers in Franklin County and Rowe are:

- An increase in average temperature, as well as more extreme heat and extreme temperature fluctuations;
- An increase in annual precipitation and an increase in very heavy precipitation events – where more rain, snow, or ice falls in a short period of time – interspersed at times with very dry periods;
- Stronger storms with higher winds, due to an overall warmer climate with more moisture in the atmosphere.

In the face of these changes, municipalities are working to increase their resilience and adapt to natural hazards and extreme weather events. Relatively recent events in Franklin County, such as Tropical Storm Irene (August 29-30, 2011) and “Snow-tober” (October 28, 2011), have reinforced the need for resiliency planning and compelled communities like the Town of Rowe to proactively plan and mitigate potential risks. This type of planning will reduce the vulnerability of Rowe’s people, infrastructure and natural resources, and will empower Rowe’s officials and citizens to take steps to protect themselves and their community.

In late 2019, with funding from the Massachusetts Executive Office of Energy and Environmental Affairs’ Municipal Vulnerability Preparedness (MVP) program, the Town of Rowe hired the Franklin Regional Council of Governments (FRCOG) to assist the Town in completing the planning process to achieve designation as a Municipal Vulnerability Preparedness Community or “MVP” Community. As a State-certified MVP Provider, the FRCOG helped Rowe engage in a community-driven process that brought together climate change information and local knowledge to conduct community outreach and the Community Resilience Building (CRB) workshop, whose central objectives were to:

- Define top local natural and climate-related hazards of concern;

¹ <http://www.resilientma.org/map/>

- Identify existing and future strengths and vulnerabilities;
- Develop prioritized actions for the Town;
- Identify immediate opportunities to collaboratively advance actions to increase resilience.

This report summarizes the findings of the Town of Rowe's Community Resilience Building Workshop.

Community Resilience Building Workshops

Summary of Findings

The Town of Rowe, population 441, has conducted a number of planning projects in previous years, including its 2016 Hazard Mitigation Plan, which enabled the Town to identify high priority hazards as well as areas, infrastructure and populations vulnerable to a variety of hazards, and action items to address hazards. Other planning efforts include the recently completed Forest Stewardship Plan for Pelham Lake Park.

In spite of Rowe's diligence in completing these planning efforts, there is still a need for the community to conduct a hazard assessment across scales – from individual buildings and bridges to rivers and landscapes, and across sectors – infrastructure, society and environment – looking specifically through the lens of climate change and its likely impacts.

The Town of Rowe planned to hold their Community Resilience Building Workshop in late March 2020, but the meeting was ultimately cancelled due to the ongoing COVID-19 pandemic. In place of an in-person workshop, the Committee devised a plan to remotely complete the objectives of the MVP Planning process. The Town was committed to gathering input from community members in order to build the recommendations presented in the plan.

Town of Rowe and FRCOG staff prepared a series of newsletters, which were published in the *Rowe Goal Post*, a monthly newsletter sent out to all residents. The newsletter series provided context for the MVP planning process, highlighted how Rowe's infrastructure, society, and environment are already being impacted by climate change, explained how the Town may be impacted in the future, and provided several opportunities for public input through online surveys. The Town then a public workshop in late March. Prior to the workshop, surveys were sent to all of the invited stakeholders to better understand how climate change has been impacting Rowe from each of the stakeholders' unique municipal perspective.

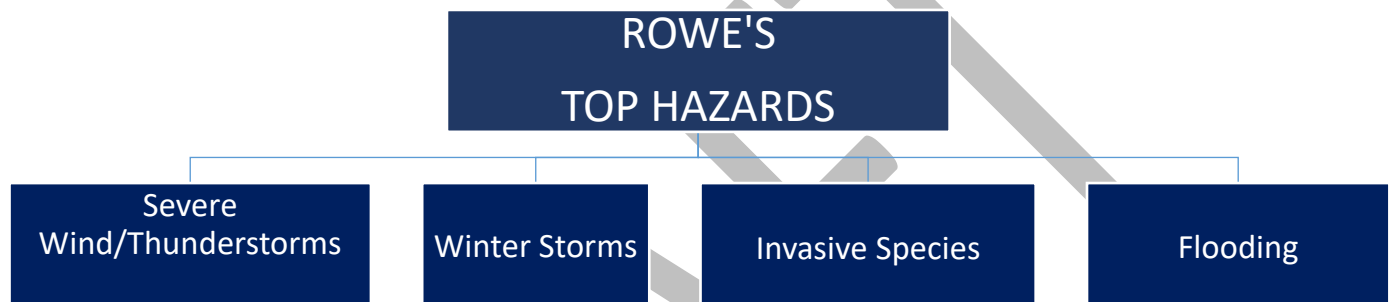
During the workshop, participants considered climate change impacts most likely to affect Rowe, including rising and extreme temperatures, extreme weather events and increased precipitation, both in quantity and intensity. The workshop also allowed participants to develop resiliency actions Rowe can take to build on identified strengths and vulnerabilities.

The workshop was critical to enabling participants to think about and engage with people from different sectors. Representatives from the Highway Department, Town Administration, Board of

Heath, Rowe Elementary School, Park Commission, Select Board, Yankee Rowe, the Rowe Conference Center, and local conservation organizations came together to discuss the most threatening hazards to the Town of Rowe and to agree upon high priorities and actions to address them.

Top Hazards

Workshop participants discussed a number of hazards that affect Rowe, deliberating on how frequent, how intense and how widespread each hazard has been and could potentially be in the future. Hazards discussed included: dam failures, severe winter storms/ice storms, earthquakes, hurricanes, wind storms/microbursts, tornados, ice jams, floods, wild fires, landslides, droughts, human-made hazards and extreme temperatures. Top hazards identified by the participants are as follows:



Areas of Concern

Infrastructure and Transportation:

Prolonged power outages; above ground power lines and utilities are vulnerable to all hazards; aging and/or failing culverts; stormwater drainage on emergency access/evacuation routes; washouts and erosion on unpaved roads; earlier and longer mud seasons, which churn unpaved roads; weakening of infrastructure due to more frequent and intense storm events; vulnerability of the Town's internet service, which is critical for residents to communicate during emergencies; strained electrical grid during heat waves; the Town Hall, DPW building, Fire Station, and Broadband Hut are all at risk of flooding.

Public health: Increase of insect-borne diseases such as Lyme disease and EEE; respiratory illness associated with higher temperatures; impact of extreme temperatures on vulnerable populations; private wells running dry during drought or are not operable during power outages; power outages create a sense of fear and stress residents.

People: Elders throughout Town who may become isolated during/after storms due to hazards such as icy roads; seniors on fixed incomes who may not be able to make costly repairs due to damage from flooding or severe storms; lack of public transportation for seniors to get to doctor appointments or the grocery store; homes in the floodplain and/or wildland urban interface; effective emergency communications with residents.

Ecosystems and natural resources: Increase of invasive species on private and public property choking out native plants and stressing critical infrastructure; aquatic invasive species at Pelham Lake Park; rising temperatures threaten the overall health of the lake and aquatic species; northern hardwood forest species are vulnerable climate change and pests such as the emerald ash borer and hemlock wooly adelgid; wildfire potential throughout Town.



In Rowe, Tropical Storm Irene caused over \$160,000 of damages, primarily from clogged culverts, flooding and erosion of the roads and road shoulders.

Current Concerns & Challenges Presented by Hazards

Community members and participants in the workshop discussed a number of hazards that have affected the community in recent years, such as:

- Changes in precipitation including more ice and rain in the winter and increased amounts of precipitation falling in a short period;
- Short-term, acute weather events including severe wind events, extreme and erratic temperatures; and
- Prolonged periods of drought, such as in the summer of 2020, which threaten water supply resources and dry conditions that increase the potential for a wildfire outbreak.

Participants in the workshop expressed concern about the impacts flooding and winter storms have on the Town's roads, especially with regard to hazardous erosion from heavy rain events and frequent icy conditions. Washouts, mudding, and ice can make roads impassable leaving residents isolated in remote locations. For example, many of Rowe's residents are seniors who do not feel safe traveling in such conditions.

Severe windstorms and thunderstorm events were also identified by workshop participants as a top hazard. Community members noted that residents have become accustomed to losing power several times a month due to the frequency of storms with high-speed wind gusts. These frequent outages can last anywhere from a couple of hours to a couple of days. In addition to interrupting services, participants noted that this also creates a sense of fear in the Town and is not beneficial to the overall wellbeing of residents.

Invasive species and the increase in pests due to extreme temperatures were also amongst the top concerns discussed by workshop participants. A later first frost will allow for pests such as mosquitoes and deer ticks to pose health risks to residents later into the year. Additionally, invasive species are encroaching on public and private property, and the Town's infrastructure has been affected by invasive species such as oriental bittersweet and Japanese knotweed. Representatives from the Park Commission also spoke to concerns about aquatic invasive plants affecting the health of Pelham Lake.

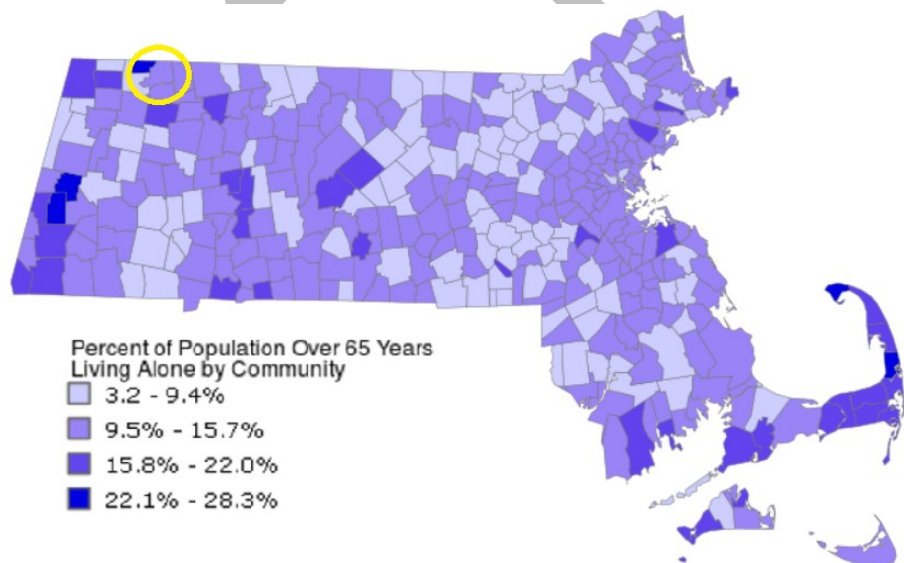
Specific Categories of Concerns and Challenges

Energy Resilience: Rowe's power grid was considered by MVP workshop participants to be vulnerable to natural hazard impacts, such as severe storms that topple trees and bring broken branches down on power lines. Snow has been less of an issue compared to ice storms causing power outages in recent years. The Town's electrical infrastructure is above ground and repairs are becoming more expensive. Workshop participants noted that the Town loses power several times per month, which can interrupt services.

The Town has backup power available at the Highway Department, Fire Department, Town Hall, Broadband Hut, and the Elementary School. The School is the Town's emergency shelter and currently uses a diesel generator. School staff are interested in procuring battery storage for the solar array in order to increase resiliency during an extended power outage, in addition to increasing the size of the solar array.

Vulnerable populations:

Elderly residents, isolated residents, and residents who are dependent on medical devices were also of concern to workshop participants. These residents may not have reliable access to information concerning emergencies or access to regular, reliable transportation. Ice storms and winter storms were noted to impact seniors the most, as even if they do have their own private



Approximately 10-15% of seniors in Rowe live alone. Source: resilientMA.org

transportation, icy roads are dangerous and difficult to traverse. Additionally, ensuring elderly residents have access to home heating and cooling equipment was a concern for workshop participants, due to the negative health impacts associated with extreme temperatures. Throughout the COVID-19 pandemic, Board of Health members have worked to collect data on the needs of elderly residents, but noted a need to continue this assessment.

Road Drainage: Approximately 30% of the roads in Rowe are gravel, which are more vulnerable to washouts during heavy precipitation events. Workshop participants discussed concerns about stormwater runoff causing hazardous erosion, sometimes making roads impassable in locations throughout the town and rendering residents isolated. Residents and emergency responders in Town are used to dealing with snow, ice, downed trees and other hazards, but flooding causes the most disruption to their services and can leave residents isolated.

Concern about this challenge has increased with the impacts of more frequent and intense precipitation events. The Highway Department regularly clears out culverts and drainage ditches throughout Town to ensure proper drainage, but flash flooding, washouts and mudding occur regularly. Key troublesome locations include Davenport Road, Davis Mine Road, and Potter Road. Additionally, there is a bridge on Kings Highway without any drainage infrastructure that has caused problems in the past.

The FRCOG is currently conducting a project in other Franklin County towns to develop and pilot an assessment and right-sizing protocol for drainage culverts that do not cross a perennial stream. The results of this analysis can be used by Rowe Highway Department to determine the appropriate size of the culverts that the town is able to replace on its own. The FRCOG can work with the Highway Department to refine this protocol so that it applies more specifically to Rowe.

In general, dirt roads in Rowe are vulnerable to washouts and disrepair. The FRCOG is also currently conducting a pilot project to showcase how various stormwater management techniques could be applied to towns with many rural and unpaved roads. The project works with Highway Superintendents to examine roads that have been experiencing stormwater issues and assess the potential for applying stormwater Best Management Practices (BMPs) to improve the situation. The information and stormwater BMP concepts provided by the FRCOG can then be used when allocating Chapter 90 funds or applying for other grant funding. Stormwater concepts can also be incorporated into future roadway improvement projects to create a more resilient roadway, save the town funding from repetitive repairs, and help protect the water quality of the many streams that run alongside our roads.

When conducting any roadway improvements, the Town should be cognizant of the need to balance the rural/scenic character of the roads with any actions to increase their resiliency to climate change.

Invasive Species: Workshop participants explained that a variety of landscapes in Rowe - from home gardens and roadsides, to forests, and wetlands - have become increasingly susceptible to invasive species. These non-native plants pose an ecological risk by crowding out native plants, decreasing the availability of food, forage, and nesting habitat for insects, including wild native pollinators, which are keystone species that are vital to sustaining the whole ecosystem. Invasive species also threaten transportation infrastructure in Town by clogging culverts, overwhelming roadsides, and destabilizing drainage areas. Invasive species are especially a concern in Pelham Lake Park, and the Park Commission has developed a Forest Stewardship Plan² with recommendations to monitor and address invasive species such as the Hemlock Woolly Adelgid and Emerald Ash Borer.

Northern Hardwood Forests: Workshop participants also discussed the ways in which climate change is affecting the Town's forests. A longer growing season and increasing temperatures

² Forest Stewardship Plan 2020-2030 for Pelham Lake Park, prepared by Wigmore Forest Resource Management. https://www.rowe-ma.gov/files/Rowe-Pelham_Lake_Forest_Stewardship_Plan__FINAL_9-30-20.pdf

are shifting habitat conditions for trees northward and to higher elevations. Over time, the birch-beech-maple forests typical of New England will decline while oak-hickory forests more typical in areas south of New England will thrive. An expected increase in periods of drought between intense precipitation events may weaken some trees, leaving them more susceptible to insects and diseases, while it may improve conditions for other trees.

Pelham Lake Park is a cherished recreational amenity and ecological resource in Town, but is susceptible to the impacts of climate change. The Forest Stewardship Plan for the Park details several sustainable forestry practices that can be implemented, such as underplanting red and white oak seedlings to assure oak's continued presence. Although the Forest Stewardship Plan is an excellent resource for maintaining the 1,264 acres associated with the Park, the Town does not yet have an Open Space and Recreation Plan that could aid in identifying additional parcels of land that should be conserved to increase resiliency.

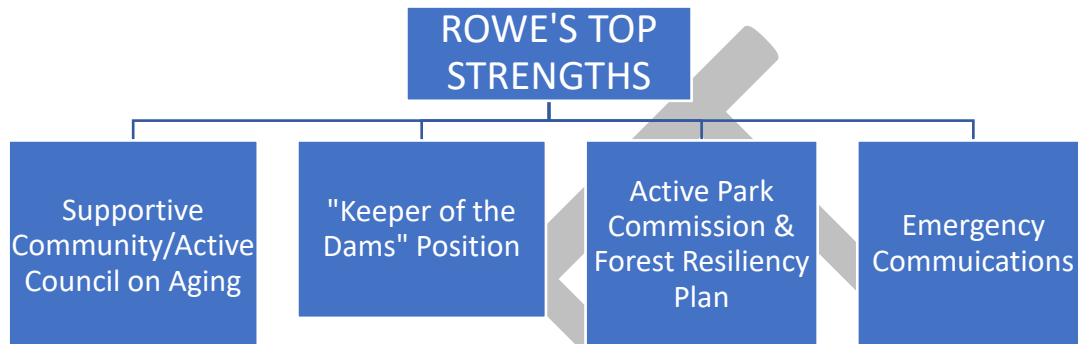
Vulnerabilities related to wildfire: When considering the numerous wildfire outbreaks across Massachusetts in 2020, workshop participants raised concerns about the Town's limited infrastructure for firefighting. Developing a maintenance plan for dry hydrants and acquiring adaptive fire-fighting equipment such as a UTV vehicle were identified as top needs.

Vector-borne Diseases: Massachusetts has seen cases of once non-existent or very rare tick-borne illnesses rise, including Anaplasmosis, Babesiosis, Lyme, Powassan, Spotted fever rickettsiosis and Tularemia. Tick activity and tick-borne diseases occur year-round in Massachusetts. Although tick activity is weather dependent, there are two peaks during the year; the first begins in March/April and lasts through August, and the second occurs in October-November. The majority of cases of tick-borne disease occur in June through August. Tick-borne diseases experienced in residents and identified in lab tests of ticks have increased in number and in kind across Franklin County due to climate change over the last ten years. Franklin County's rate of emergency department visits for tick-borne diseases is among the highest in the state.

Emergency Response: Although the Town is already working to support residents during emergencies, workshop participants identified a need to formalize response plans and distribute emergency preparedness information. Rowe does not yet have a Comprehensive Emergency Response Plan (CEMP), so developing an initial plan was identified as a necessary step for the Town to take on.

Current Strengths and Assets

The Town has taken a proactive approach to emergency preparedness, which was evident at the workshop as participants readily provided known vulnerabilities, but also strengths and actions to address these vulnerabilities. Participants cited several strengths and assets that help keep their community resilient in the face of climate change and other challenges. They include:



Infrastructural Strengths: The Town's bridges are overall in good condition and the Town has already secured funding for a major repair on Yankee Road.

During the development of Rowe's Hazard Mitigation Plan in 2016, the Town implemented a "Keeper of the Dams" position, whose responsibilities include monitoring water levels during weather events and controlling overflow to reduce flooding in the Town Center.

Records are relatively well protected from flooding; Town staff try to keep them at higher ground. In addition, the Town has been working on scanning records and digital backup and has two off site backups. Records dating back to 1700s are stored in a vault.

The Highway Department, Fire Department, Town Hall, Elementary School, and Broadband Hut all have backup generators. The School has a diesel backup generator and is looking into alternative methods of backup power that do not require the use of fossil fuels.

Societal Strengths: During the workshop, participants agreed that the Town has great support networks, especially for seniors in Town. Approximately 27% of Rowe's residents are seniors, and the Town would like to ensure they have adequate resources during emergencies and are continuing efforts to determine what their specific needs are.

Rowe has a part-time town nurse who keeps in touch with seniors by phone and assesses needs. They have a year round program to check in on people without transportation. The Elementary school also has a full time nurse. Rowe is a member of FRCOG's CPHS, which is a regional health department.

The Town publishes a monthly newsletter with announcements from municipal departments. The newsletter is widely read by residents. Rowe also uses a reverse 911 service to communicate with residents during an emergency.

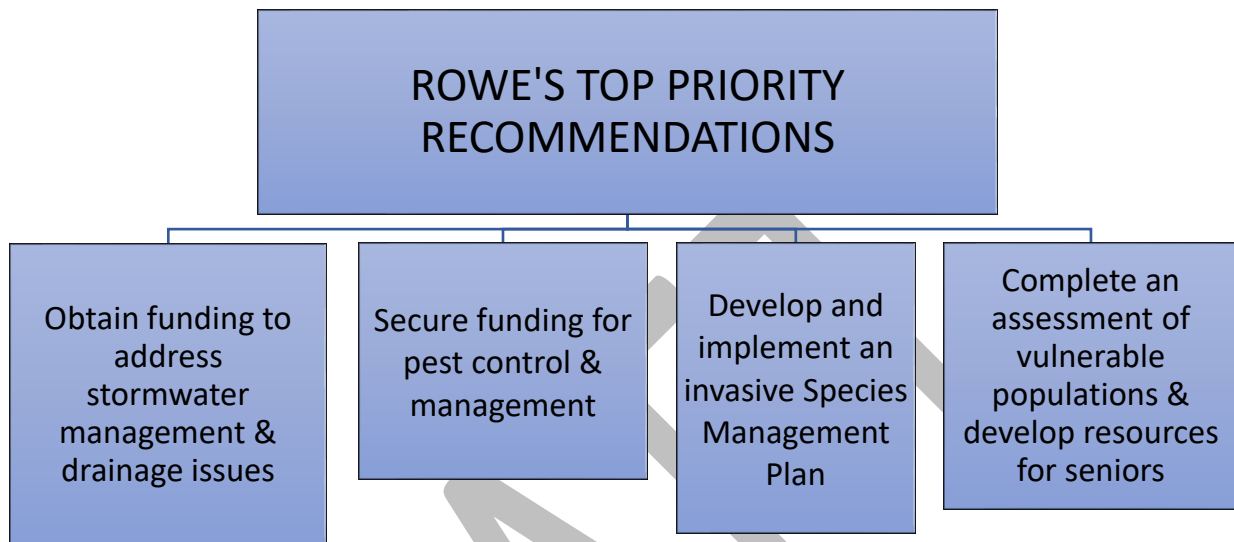
Environmental Strengths: Rowe has an active Park Commission that oversees the 1,000+ acres of protected land associated with Pelham Lake Park. A Forest Stewardship Plan was recently developed for the Park with funding through the MA EoEEA and the Mohawk Trail Woodlands Partnership.

Rowe is a member of the Pioneer Valley Mosquito Control District, and participates in the tick-testing program through UMass.

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Top Recommendations to Improve Resilience

Rowe's top priority recommendations, shown below, address key vulnerabilities while building upon current strengths.




Obtaining funding to address stormwater management & drainage issues topped the list of highest priority recommendations. Flash flooding is an ongoing issue affecting the extensive network of gravel roads in the Town, which can be addressing by developing Nature Based Solutions (NBS) such as green stormwater BMPs in combination with conventional drainage structures to mitigate runoff and erosion. For priority locations, the Town can coordinate with FRCOG to conduct stormwater site assessments and develop stormwater BMP concept designs based on the recent Franklin County Stormwater Pilot Project. This work will need to be balanced with the rural character of Rowe's roadways, as all of the roads in town are designated as Scenic Byways. This action item includes obtaining funding to complete an assessment of all culverts and drainage system in Town.


Conducting an assessment of vulnerable populations is also considered a top priority recommendation. The Town would like to have better information about needs for communication, evacuation, and sheltering for the Town's vulnerable populations, especially the Town's seniors. Once the assessment is complete, resources should be developed and distributed. The Town is committed to making Rowe an age-friendly community; implementing this action item would be a good step forward.


Developing and implementing an invasive species management plan is also a high priority for Rowe. Several necessary actions were identified in the Pelham Lake Park Forest Stewardship Plan that could be included in the overall management plan for the Town.


Securing funding for pest control & management is another top priority. The Board of Health reported participating in services such as the Pioneer Valley Mosquito District and the tick-testing program through UMass is critical for the Town, but they are cost prohibitive to continue.




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Community Resilience Building Risk Matrix				 www.CommunityResilienceBuilding.org							
H-M-L priority for action over the S hort or L ong term (and O ngoing) V = Vulnerability S = Strength				Recommendations	Flooding	Top Priority Hazards				Priority	Time
						Severe Wind/ Microbursts	Winter Storms	Invasive Species	H - M - L	Short Long Ongoing	
Features	Location	Ownership	V/S	Infrastructural							
Road Drainage/Culverts	Town-wide; problem areas include: Davenport Road, Davis Mine Road, Potter Road	Public	V	30% of Rowe's roads are gravel, which are often washed out during storm events. Kings Highway road does not have any culverts below the bridge and is experiencing erosion. Additionally, increased winter rains are leading to a prolonged mud season. Hire a consultant to identify low cost drainage solutions/nature based solutions on gravel roads to mitigate stormwater flows off the road.	X					H	S
	Town-wide; problem areas include:		V	Hire a consultant to complete an assessment of all culverts and drainage systems in Town. The assessment should include an evaluation of the physical state of the culverts and GIS data to have record of where culverts are located. Based on the results of the inventory, prioritize repairs and replacements. Develop right-sizing protocol of culverts for Rowe.	X					H	S
Bridges	Town-wide	Public	S	The Town’s bridges are overall in good condition and the Town has already secured funding for a major repair on Yankee Road.	X	X	X			N/A	N/A
Water Resiliency	Town-wide	Public/Private	S	During recent droughts, private wells have run dry and residents have had to drill new ones. The Town has several ways to supply residents with water if their wells run dry: the Church has a spring that is tested monthly and residents could get 5-10 gallons at a time if needed, and the Park, School, and Town Hall are all Public Water Supplies.		X				N/A	N/A
Water Supply/Infrastructure for Firefighting	Priority Areas	Public	S/V	Rowe’s volunteer fire department can use pond water and dry hydrants as a backup water supply. Identify the location of all dry hydrants throughout Town and come up with a maintenance/flushing plan to ensure the hydrants will be functional during an emergency.						M	L
	Town-wide	Public	V	Acquire a UTV that could be used for brushfires or driving on muddy roads as a part of emergency response needs.	X	X	X			L	L


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					Flooding	Severe Wind/ Microbursts	Winter Storms	Invasive Species	Priority	Time
Features	Location	Ownership	V/S						H - M - L	Short Long Ongoing
Power grid	Town-Wide	National Grid	S/V	Wind storms consistently knock out power for residents. Some trees were cutback when broadband was installed, additionally National Grid has been completing cutbacks on Zoar Road and Cyrus Stage/Old Cyrus Stage. The majority of problems are located where there are stands of pine trees. All of the roads in town are designated as scenic byways so the Town cannot easily cut down problem trees.		X	X		N/A	N/A
			V	Above ground power lines are vulnerable to natural hazards; burying all power lines in the Town is a cost prohibitive measure. Advocate to the Franklin County legislative delegation about these issues and request they communicate with utility companies (Eversource/DPU) about these issues.		X	X		M	S
Significant Hazard Dams	Pelham Lake Dam, Mill Pond Dam	Town	S	Heavy rains put a lot of pressure on dams; the Town needs to stay on top of releases to mitigate impact on dams. Rowe created "keeper of the dam" positions to help stay on top of releases. Both were assessed in 2017 and the next evaluation will be in 2023.	X	X			N/A	N/A
	Pelham Lake Dam	Town	V	Secure funding to hire a Registered Professional Engineer to investigate and identify measures to improve the hydraulic capacity of the dam to safely pass the Spillway design flood with one foot of freeboard, as suggested in the most recent dam inspection.	X	X			M	O
	Mill Pond Dam	Town	V	Secure funding to hire a Registered Professional Engineer to complete a detailed Hydrologic and Hydraulic Analysis (H&H) in order to identify an appropriate method to improve the dams hydraulic capacity, as suggested in the most recent dam inspection.	X	X			M	O
Municipal Buildings	Town center	Town	V	Municipal buildings are located around waterbodies, which makes them vulnerable to flooding. The Town Hall is most vulnerable as it is right next to the Pelham Lake. The DPW building, Fire Station, Broadband Hut, and Historic Commission are also vulnerable. The Rowe Elementary School and Public Library are uphill and less vulnerable; DPW equipment can be kept at the school. Hire a consultant to identify necessary flood proofing measures for Rowe's municipal buildings.	X	X			L	L

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					Flooding	Severe Wind/ Microbursts	Winter Storms	Invasive Species	Priority	Time
									H - M - L	Short Long Ongoing
Features	Location	Ownership	V/S							
Municipal Records	Town center	Town	S	Records are relatively flood proofed; Town staff try to keep them at higher ground. The Town has been working on scanning records and digital backup and has two off site backups. Records dating back to 1700s are stored in a vault.	X	X	X		N/A	N/A
Energy Resiliency	Town Buildings	Town	S	The Highway Department, Fire Department, Town Hall, Elementary School, and Broadband Hut all have backup generators. The School has a diesel backup generator and is looking into alternative methods of backup power that don’t require the use of fossil fuels. The school would also like to expand its solar array.		X	X		N/A	N/A
Transfer Station	Zoar Road	Town	V	The Town landfill is right on the edge of Taylor Brook and is not formally capped. There have been minor issues in the past, but there are concerns that this could be a larger problem in the future with stronger storms. Hire a consultant/engineer to evaluate the conditions at the landfill and provide recommendations to mitigate erosion issues.	X				L	L
Societal										
Shelters	Rowe Elementary School	Town	S	The Rowe Elementary School is the main shelter; it was built in 2014, so is ADA accessible and has showers/other necessary amenities.		X	X		N/A	N/A
			V	Obtain funding for a larger generator for the school for sheltering purposes. Additionally, obtain funding for more solar panels at the school and incorporate battery backup to improve resiliency.		X	X		M	O
Food Pantry	Federated Church	Town of Charlemont	S	Residents have access to the Federated Church Food Pantry in Charlemont.		X	X		N/A	N/A
Isolated Residents	Town-Wide	Public	V	Senior citizens may be isolated, especially those who live in areas of Town where roads become mudded or icy, and may not have access to electronic communications that would notify them of an emergency.	X	X	X		N/A	N/A
			V	Develop and distribute resources for seniors, such as a directory for available services.	X	X	X		H	O

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					Flooding	Severe Wind/ Microbursts	Winter Storms	Invasive Species	Priority H - M - L	Time Short Long Ongoing
Features	Location	Ownership	V/S							
			V	Make Rowe elderly friendly so people can age in place. Support a small elderly housing project/apartments, so the elderly wouldn't have to leave Town if they had to sell their house.	X	X	X		H	O
Neighborhood Networks	Town-wide	Public/Private	S	At the beginning of the COVID-19 pandemic, the Board of Health sent out a survey to all residents to ask what type of assistance they need/what resources they already have. The BOH put these data on a map and were able to use it throughout the pandemic to ensure residents had necessary resources. The BOH is now working on sending out a new survey and identifying vulnerable populations. Secure funding to continue surveying residents, identifying needs, and developing a resource plan.	X	X	X		H	O
Council on Aging	Town-wide	Public	S	Rowe has an active COA. The group does not have a van, but can help with communications. The COA is focused on the community building rather than emergency response.	X	X	X		N/A	N/A
Town Nurse	Town-wide	Public	S	Rowe has a town nurse (24 hours a week) who keeps in touch with seniors by phone and assesses needs. They have a year round program to check in on people without transportation. The Elementary school also has a full time nurse. Rowe is a member of FRCOG's CPHS, which is a regional health department.				X	N/A	N/A
Emergency Communications	Town-wide	Public	S	Rowe uses reverse 911 service. Most signups are through cell phones, but if the power goes out, this means most people would not get the call. Rowe has a noon-time alarm, which could be used for emergencies.					N/A	N/A
			S	The Town publishes a monthly newsletter with announcements from municipal departments. The newsletter is widely read by residents.					N/A	N/A
			V	Educate people & remind people of cell phone battery backups. Develop a brochure with household emergency preparedness info, which could also be posted as a newsletter series in the Rowe Goal Post.					H	O

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									H - M - L	Short Long Ongoing
Features	Location	Ownership	V/S							
Emergency Response	Town-wide	Public	S/V	Rowe has good equipment that allows them to clean up debris after a storm and a committed work force. Rowe takes longer to get power back after storms than surrounding Towns due to the size of the work crew.		X	X		N/A	N/A
			V	Develop a comprehensive emergency management plan (CEMP) to facilitate a coordinated response to hazard events. The CEMP should also include evacuation routes, with specific instructions for how to evacuate if there were to be an emergency at the Yankee Rowe spent fuel storage site.	X	X	X		H	S
Environmental										
Vector-Borne Diseases	Town-wide	N/A	S/V	Rowe is a member of the Pioneer Valley Mosquito Control District, and participates in the tick testing program through UMass. Both of these programs have provided valuable services for the Town, but both programs are expensive for the Town. Seek funding/grants to help offset the costs of maintaining PVMCD membership.				X	H	S
Forests and Open Spaces	Town-wide	Public/Private	V	Prolonged droughts are leading to dry conditions throughout the region & Rowe. Rowe's forests and open spaces are vulnerable to drought and are at an increased risk of wildfire. Additionally, the Hemlock Wooly Adelgid, and Emerald Ash borer are impacting Rowe's forests - if large % of hemlock trees die the Town’s forests will be even more vulnerable to wildfire.				X	N/A	N/A
Forest Health	Pelham Lake Park ³	Town	V	Identify and treat white ash trees to inoculate them against the Emerald Ash Borer in order to maintain biodiversity in the Town’s forest. Install a feasible number of Hemlock Health monitoring plots to annually look for signs of Hemlock Wooly Adelgid and Elongate Hemlock Scale.				X	H	O
Invasive Species	Pelham Lake Park	Town	V	Hire a consultant to develop an invasive species management plan; Japanese knotweed, multiflora rose, and oriental bittersweet are beginning to choke out native plants in Town. Alternatively, identify available opportunities available through the NRCS for invasive species control.				X	H	S

³ Action items for Pelham Lake Park drawn from the Forest Stewardship Plan 2020-2030, prepared by Wigmore Forest Resource Management

Community Resilience Building Risk Matrix				 www.CommunityResilienceBuilding.org						
H-M-L priority for action over the S hort or L ong term (and O ngoing) V = Vulnerability S = Strength				Recommendations	Top Priority Hazards					
					Flooding	Severe Wind/ Microbursts	Winter Storms	Invasive Species	Priority H - M - L	Time Short Long Ongoing
Features	Location	Ownership	V/S							
Open Space & Recreation Plan	Town wide	Town	V	Convene an Open Space & Recreation Plan Update Committee to prepare an Open Space and Recreation Plan to prioritize areas of town to preserve from development, which helps to maintain natural flood storage capacity, reduce erosion threats, and maintain/increase biodiversity. As a part of the planning process, identify parcels of land around Pelham Lake Park that could be acquired to create wildlife corridors.	X			X	H	L

High Priority Recommendations

- Hire a consultant to identify low cost drainage solutions/nature based solutions on gravel roads to mitigate stormwater flows off the road.
- Hire a consultant to complete an assessment of all culverts and drainage systems in Town. The assessment should include an evaluation of the physical state of the culverts and GIS data to have record of where culverts are located. Based on the results of the inventory, prioritize repairs and replacements. Develop right-sizing protocol of culverts for Rowe.
- Develop and distribute resources for seniors, such as a directory for available services.
- Make Rowe elderly friendly so people can age in place. Support a small elderly housing project/apartments, so the elderly wouldn't have to leave Town if they had to sell their house.
- At the beginning of the COVID-19 pandemic, the Board of Health sent out a survey to everyone to ask what type of help they would need/what resources they already have. The BOH then put these data on a map and were able to use it throughout the pandemic to ensure residents had necessary resources. The BOH is now working on sending out a new survey and identifying vulnerable populations. Secure funding to continue surveying residents, identifying needs, and developing a resource plan.
- Educate people & remind people of cell phone battery backups. Develop a brochure with household emergency preparedness info, which could also be posted as a newsletter series in the Rowe Goal Post.
- Develop a comprehensive emergency management plan (CEMP) to facilitate a coordinated response to hazard events. The CEMP should also include evacuation routes, with specific instructions for how to evacuate if there were to be an emergency at the Yankee Rowe spent fuel storage site.
- Rowe is a member of the Pioneer Valley Mosquito Control District, and participates in the tick-testing program through UMass. Both of these programs have provided valuable services for the Town, but both programs are expensive for the Town. Seek funding/grants to help offset the costs of maintaining PVMCD membership.
- Identify and treat white ash trees to inoculate them against the Emerald Ash Borer in order to maintain biodiversity in the Town's forest. Install a feasible number of Hemlock Health monitoring plots to annually look for signs of Hemlock Woolly Adelgid and Elongate Hemlock Scale.

- Hire a consultant to develop an invasive species management plan; Japanese knotweed, multiflora rose, and oriental bittersweet are beginning to choke out native plants in Town.
- Alternatively, identify available opportunities available through the NRCS for invasive species control.
- Convene an Open Space & Recreation Plan Update Committee to prepare an Open Space and Recreation Plan to prioritize areas of town to preserve from development, which helps to maintain natural flood storage capacity, reduce erosion threats, and maintain/increase biodiversity. As a part of the planning process, identify parcels of land around Pelham Lake Park that could be acquired to create wildlife corridors.

Medium Priority Recommendations

- Identify the location of all dry hydrants throughout Town and come up with a maintenance/flushing plan to ensure the hydrants will be functional during an emergency.
- Aboveground power lines are vulnerable to natural hazards; burying all power lines in the Town is a cost prohibitive measure. Advocate to the Franklin County legislative delegation about these issues and request they communicate with utility companies (Eversource/DPU) about these issues.
- Secure funding to hire a Registered Professional Engineer to investigate and identify measures to improve the hydraulic capacity of the dam to safely pass the Spillway design flood with one foot of freeboard, as suggested in the most recent dam inspection.
- Secure funding to hire a Registered Professional Engineer to complete a detailed Hydrologic and Hydraulic Analysis (H&H) in order to identify an appropriate method to improve the dams hydraulic capacity, as suggested in the most recent dam inspection.
- Obtain funding for a larger generator for the school for sheltering purposes. Additionally, obtain funding for more solar panels at the school and incorporate battery backup to improve resiliency.

Low Priority Recommendations

- Municipal buildings are located around waterbodies, which makes them vulnerable to flooding. The Town Hall is most vulnerable as it is right next to the Pelham Lake. The DPW building, Fire Station, Broadband Hut, and Historic Commission are also vulnerable. The Rowe Elementary School and Public Library uphill and less vulnerable; DPW equipment

can be kept at the school. Hire a consultant to identify necessary flood proofing measures for Rowe's municipal buildings.

- Acquire a UTV that could be used for brushfires or driving on muddy roads as a part of emergency response needs.
- The Town landfill is right on the edge of Taylor Brook and is not formally capped. There have been minor issues in the past, but there are concerns that this could be a larger problem in the future with stronger storms. Hire a consultant/engineer to evaluate the conditions at the landfill and provide recommendations to mitigate erosion issues.

DRAFT

CRB Workshop Participants -- Department/Commission/Representative:

Janice Boudreau, Town Executive Secretary

Bill Knittle, Rowe Elementary School Principal

Lance Larned, Highway Department

Sean Loomis, Park Manager

Alain Peteroy, Director of Land Conservation, Franklin Land Trust

Carrienne Petrik, MVP Berkshires & Hilltowns Regional Coordinator (MA EoEEA)

Laurie Pike, Park Commission

Margaret Rice, Board of Health

Joanne Semanie, Select Board, Board of Health clerk

Kevin Shea, Yankee Rowe

Benjamin Werner, Executive Director of the Rowe Center

CRB Workshop Project Team: Organization and Role

Town of Rowe

Paul McLatchy III, Town Administrative Assistant/ Town Clerk / Finance Committee

Franklin Regional Council of Governments:

Kimberly Noake MacPhee, Land Use & Natural Resources Program Manager

Megan Rhodes, Senior Land Use & Transportation Planner II

Allison Gage, Land Use & Natural Resource Planner

Recommended Citation

Noake MacPhee K., Rhodes M., Gage A. (2021) Town of Rowe Community Resilience Building Workshop Summary of Findings. Franklin Regional Council of Governments.

Appendices

Maps

Newsletters

Survey Responses

Workshop Presentation

Listening Session Presentation

DRAFT

[Placeholder for Critical Facilities and Infrastructure Map]

DRAFT

[Placeholder for Environmental Map]

DRAFT

Workshop Presentation

Community Resilience Building Workshop

Town of Rowe

March 22 2021

Zoom Housekeeping

Unmute/mute yourself – please stay muted if not speaking

Ask questions/report issues

Turn on/off video function

Prevents videos from blocking presentation

Agenda





MVP

Municipal Vulnerability Preparedness

- Overview of the Municipal Vulnerability Preparedness (MVP) Program
- Review Massachusetts’ changing climate
- Identify Top Hazards
- Identify Strengths and Vulnerabilities
- Brainstorm Resiliency Actions

Municipal Vulnerability Preparedness (MVP) Program

\$44 Million to cities and towns since 2017

BERKSHIRES & HILLTOWNS

GREATER CT RIVER VALLEY

CENTRAL

NORTHEAST

GREATER BOSTON

SOUTHEAST

MVP Program Status - February 2020

MVP Designated Communities

Ongoing Planning Grant (FY19)

NEW Planning Grant (FY20)

Regional Partnerships

Completed Action Grant (FY18)

Ongoing Action Grant (FY19)

NEW Action Grant (FY20)

Why the MVP Program?

A climate resilient town will be able to maintain functions, protect its residents and emerge stronger and better prepared for a changing climate.

Infrastructure Resilience


Social Resilience

Environmental Resilience


COMMUNITY RESILIENCE

Source: NJ Climate Change Resiliency Study


Changing Climate Variables



Changing precipitation



Higher temperatures

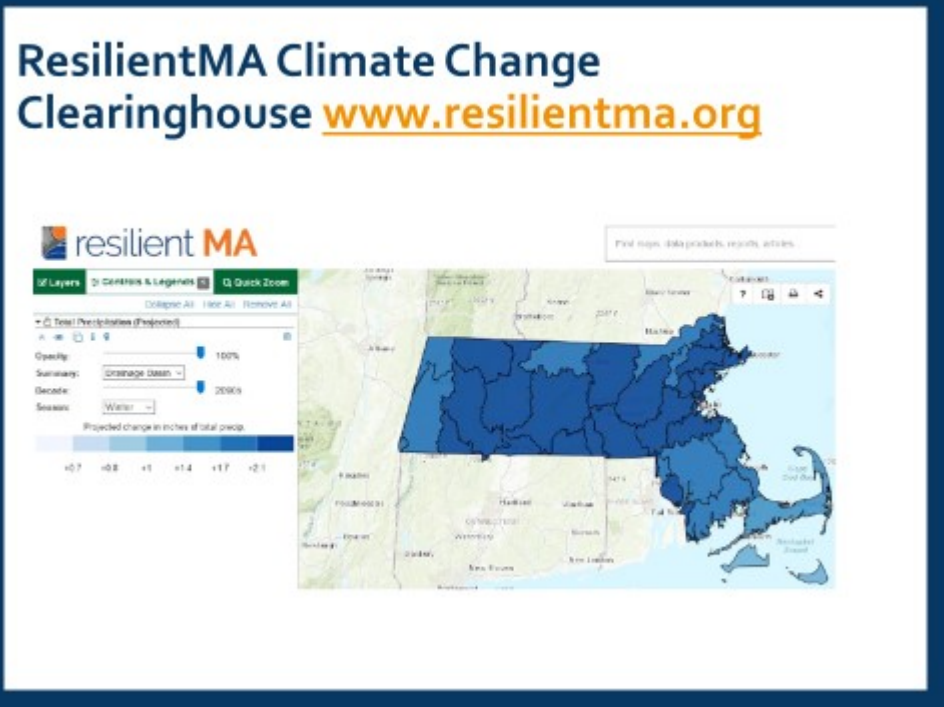
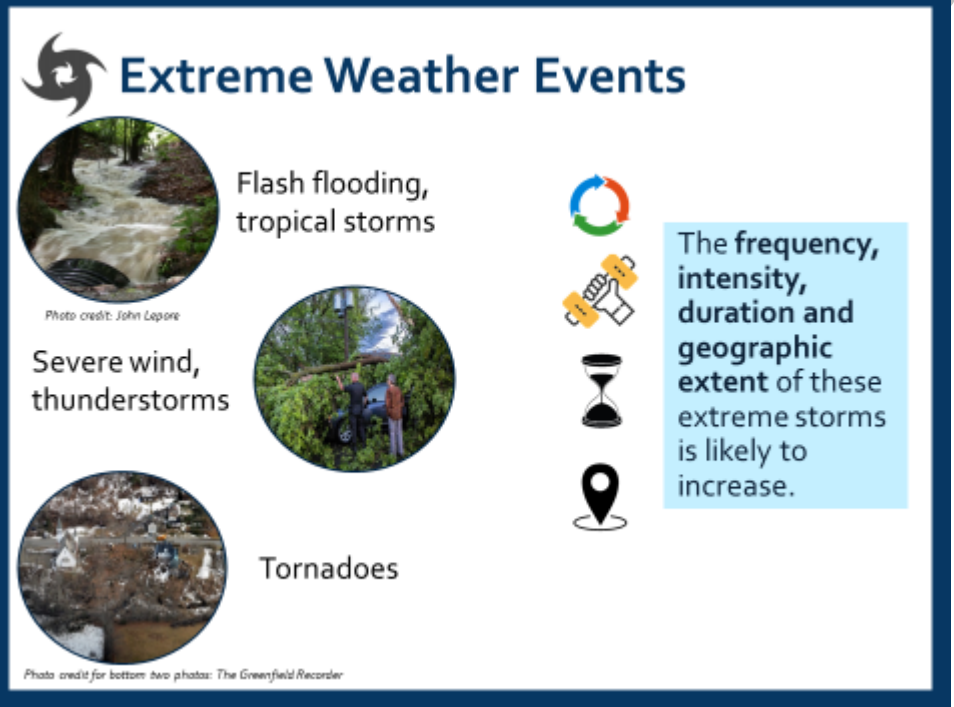
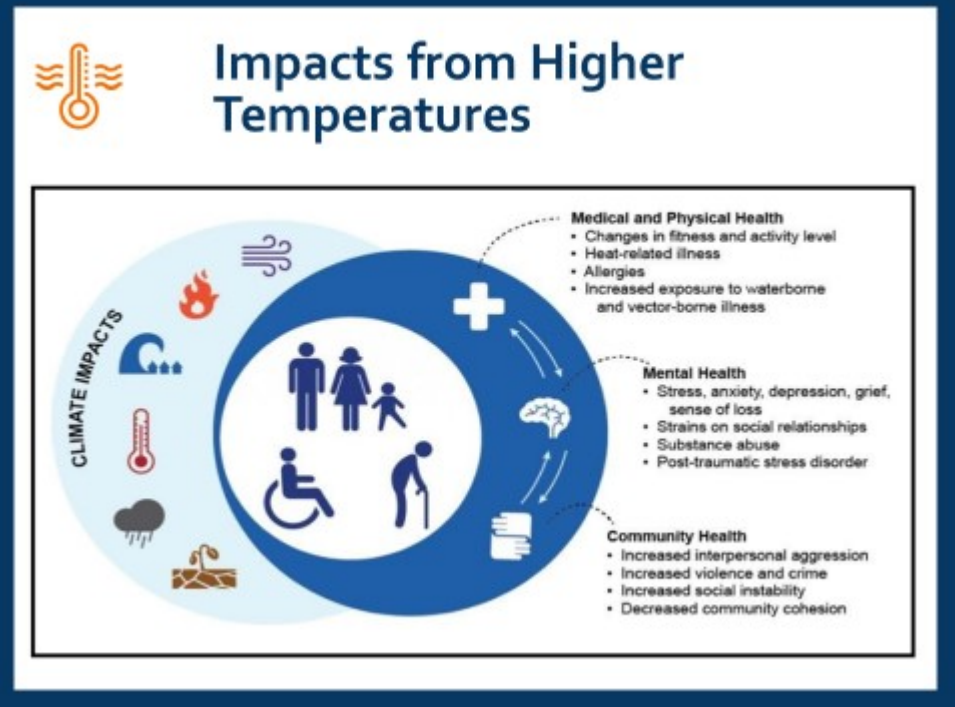
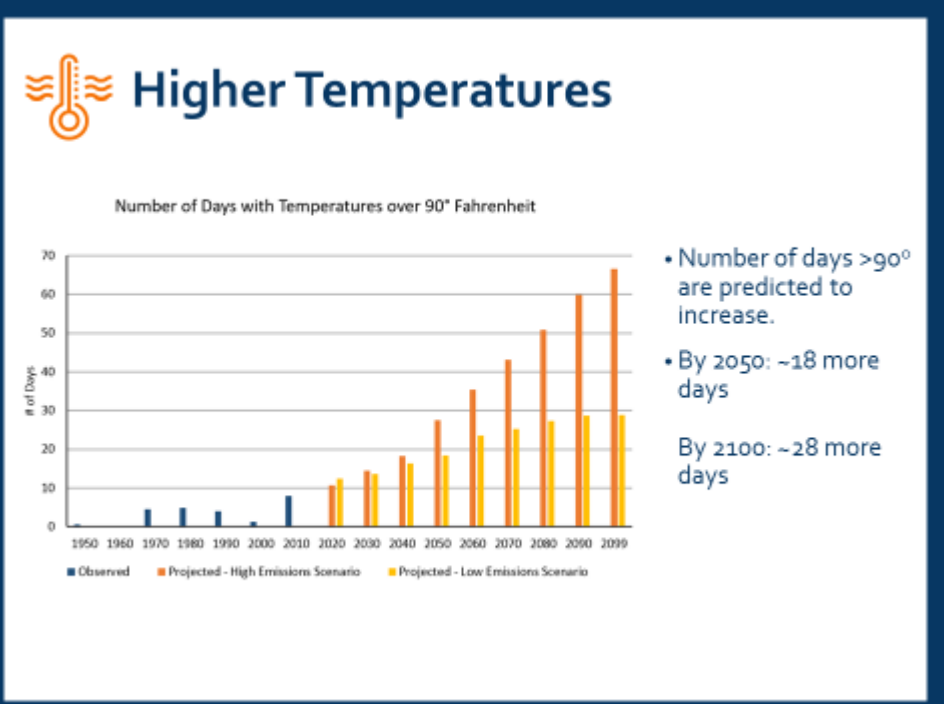
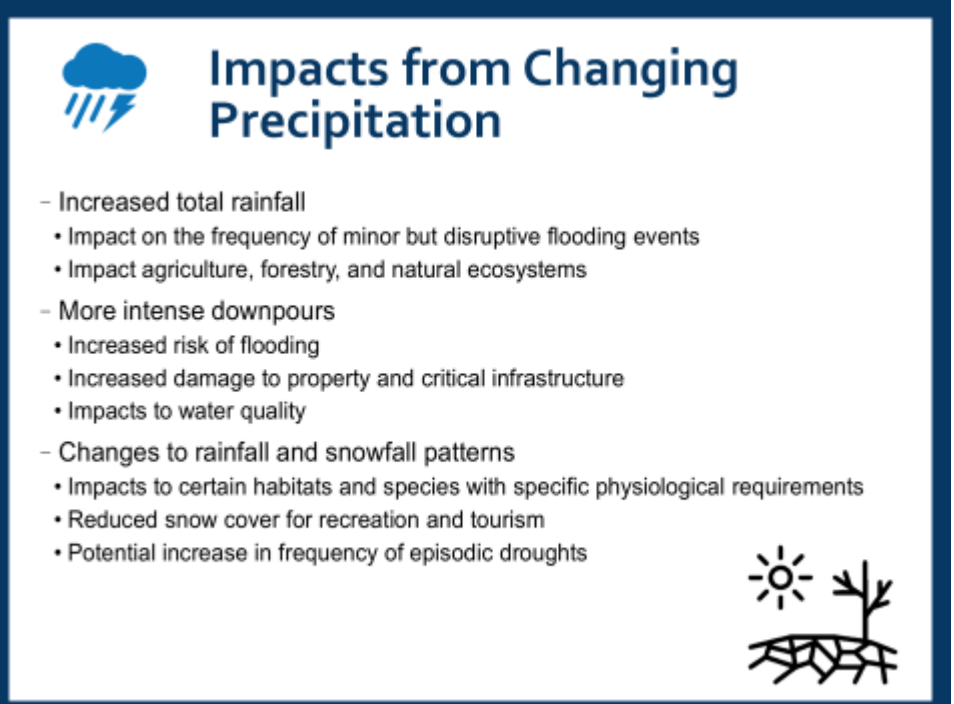
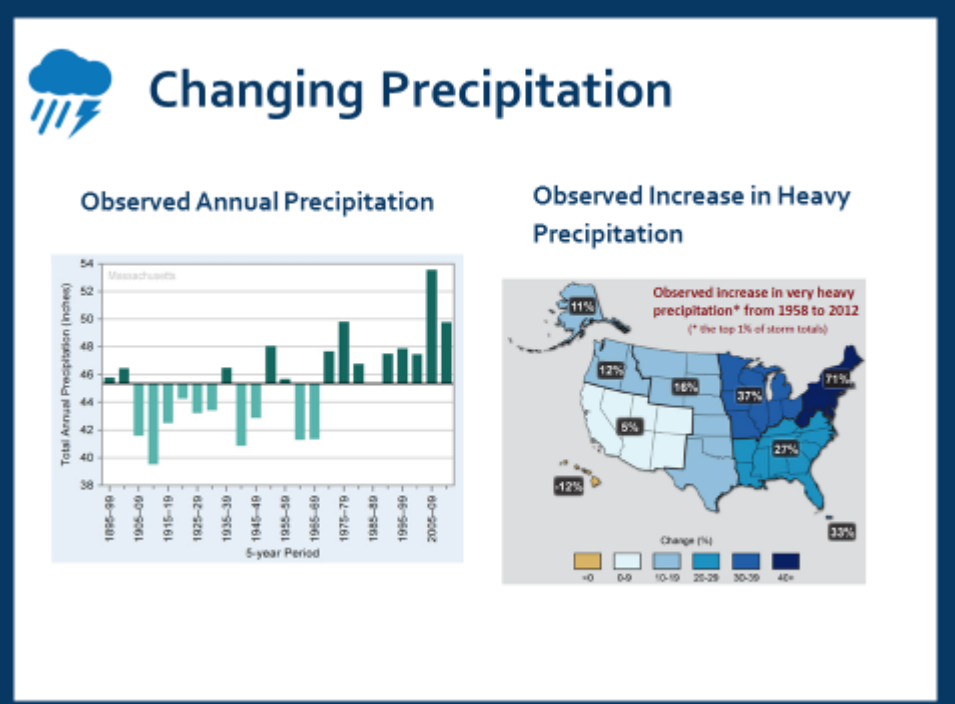


More frequent & intense storms

Climate change **increases** existing risks


Rowe is already facing

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Hazard Characterization

Participant Input



- Name
- Position/Department
- What concerns do you have about *climate change and natural hazards* and their impact on Rowe?
 - ✓ Infrastructure
 - ✓ Residents
 - ✓ Environment

Past & Recent Events

2011 Tropical Storm Irene - \$160,000 of damages



County Road washout



Pelham Lake Park beach erosion

Past & Recent Events

Microburst – June 2020



Bomb Cyclone, October 2019


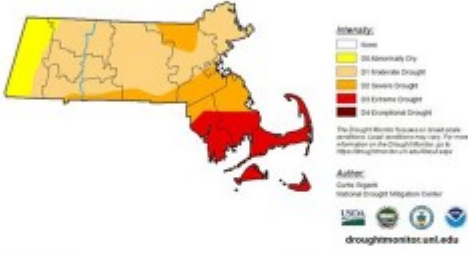


Downed trees in Warwick

View of a thundercell from a hilltop in Heath
Photo courtesy of the Greenfield Recorder

Past & Recent Events

Statewide Drought – June to November 2020



Hazard Identification



Extreme Temperatures



Drought



Severe Wind/Thunderstorms



Severe winter storms – snow & ice



Flooding



Invasive Species



Hurricanes/Tropical Storms



Landslides/erosion

- ✓ Pose the greatest threat to the community currently
- ✓ Pose the greatest threat to the town over the next decade or longer
- ✓ The community should take action to improve their resiliency

Vote on your Top Hazard

Workshop Agenda

- Overview of the Municipal Vulnerability Preparedness (MVP) Program
- Review Massachusetts' changing climate
- Identify Top Hazards
- Identify Strengths and Vulnerabilities
- Brainstorm Resiliency Actions

Workshop Outcomes

Main goal: build resilience!

1. Understand strengths and vulnerabilities in three sectors

Infrastructure


Society

Environment

2. Brainstorm actions to build on strengths and address vulnerabilities


Identify strengths and vulnerabilities

What is it?


Infrastructure


- Roads and bridges
- Power grid
- Drinking Water
- Wastewater Treatment

- Communications
- Housing
- Emergency Response
- Schools


Environment

- Coldwater streams
- Forests
- Farmland
- Floodplains

- Habitat
- Wetlands
- Aquifers





Society

- Availability of health care services
- Access to lifelines (food/water, emergency response personnel, etc.)

- Support networks that connect and maintain the supply of goods and services to vulnerable populations

Identify strengths and vulnerabilities

Examples

	Strength	Vulnerability
 Infrastructure	<ul style="list-style-type: none">• Trees near powerlines are routinely cut	<ul style="list-style-type: none">• Undersized culverts or bridges
 Environment	<ul style="list-style-type: none">• Large parcels of conserved land	<ul style="list-style-type: none">• Riverbanks overgrown with knotweed
 Society	<ul style="list-style-type: none">• Residential emergency preparedness	<ul style="list-style-type: none">• Isolated residents

Workshop Activity

Community Resilience Building Risk Matrix

www.CommunityResilienceBuilding.org

ALL HAZARDS: severe winter storms, flooding, tornadoes, dam failure, hurricanes/tropical storms, thunderstorms/microbursts, wildfire, earthquake, landslides, drought, extreme temperatures, invasive species
H, M, L: priority for action over the Short or Long term (and Ongoing)
V = Vulnerability S = Strength

Features	Location	V or S	Identified Strength or Vulnerability	Resiliency Action
Infrastructure				
Road Drainage		V	Some of Town's roads are gravel, which are often washed out during severe storms. Additionally, increased winter rates are leading to a prolonged road season.	
Highway Maintenance				
Bridges				
Water supply for fire prevention				
Infrastructure for firefighting				
Town buildings	Town center	V	Municipal buildings are located around waterbodies, which makes them vulnerable to flooding.	
Undersized Culverts		V	Culverts throughout Town are undersized and cannot accommodate stormwater.	
Electrical grid		V	Wind storms have recently knocked out power for residents.	

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Community Resilience Building Matrix

Information collected will be transposed into the matrix for the final MVP Plan

Community Resilience Building Risk Matrix									
www.CommunityResilienceBuilding.com									
Top Priority Hazards (hazards, floods, wildfires, hurricanes, earthquakes, drought, sea level rise, heat wave, etc.)									
Priority									
Time									
Short Term									
Long Term									
Features									
Location									
Ownership									
V or S									
Infrastructure									
Societal									

Types of Action Grants

Planning, Assessments, and Regulatory Updates

Nature-based Solutions for Ecological and Public Health

Resilient Redesigns and Retrofits for Critical Facilities and Infrastructure

Nature Based Solutions

Projects that restore, protect, and/or manage natural systems and/or mimic natural processes to address hazards like flooding, erosion, drought, and heat islands in ways that are cost-effective, low maintenance, and multibeneficial for public health, safety, and well-being.



Riverbank restoration on the North River, Colrain MA



Low impact development project, Greenfield MA

Why Nature Based Solutions?



Enhanced public safety by reducing risks from flooding, erosion, drought, and heat risks to vulnerable populations and community assets.




Avoided infrastructure costs of short- and long-term maintenance, unplanned repairs and safety improvements due to flooding and failure from intense rain events.



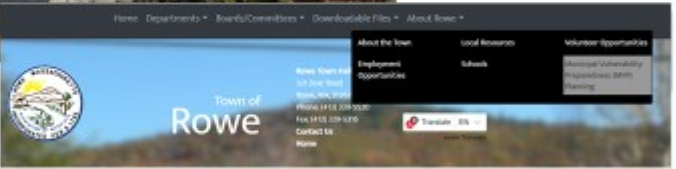
Promotes biodiversity, important for environmental health and safeguarding natural resources like water, food, and shelter.

And other ecosystem services, such as improving air and water quality, flood protection, groundwater recharge, carbon sequestration, human health and well-being

Ongoing Outreach



Learn more about the project & respond to surveys



Find up to date information about the planning process

Municipal Vulnerability Preparedness (MVP) Planning

The Town of Rowe is working with the Franklin Regional Council of Governments (FRCOG) to develop a Municipal Vulnerability Preparedness (MVP) Plan. This plan will help the town make decisions to mitigate the effects of climate change and be more resilient in the future.

The town will be holding a Community Resilience Building workshop on Monday, March 22 at 1:00 PM to discuss what actions the town can take to protect itself from future climate change impacts.

Rowe Virtual MVP Planning Process



MVP
Municipal Vulnerability Preparedness



Next Steps

TODAY: MVP Workshop ★

Draft Report & Send out for review

May 2021: Public Listening Session

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